

FIG. 1

TATGGATTGACATCGATAAATACGACTCACTATAGGGATTCTTTTTCNTTTTAAAAAAAGTTGAACAATGCAATTAGTTGCCGTCA GTTCTCACACTCTCTTAAC TTCTC  
ATACCTAAC TGACGTAT TATGCTGAGTGATATCCCTAAAGAAAAAAAAGAAAAACNAAAAATTTTTTTC AAC TTGTACGTTAATCAACGCAGTGTGAGAGAGATTGAAGAG

M O L V A S V L T L S L T S

AGCGAAATGGGACACTACACCATATCAGGAATACGTTTTCCTTGCTCCACTCCGCAAAATCTCAATCTACCGGCTTCCATGGTGATCGAAGACCTCCTTGCCTTTCCCTTCAACTTC  
TCGCTTTACCCCTGTGATGTGGTATAGTCCTTATGCAAAAGGAACACGAGGTGAGCGCTTTAGAGTTAGATGGCCCAAGTACCCTAGCTTCTCGAGGAGAACGGAAGGAGTTGAAG 240

AAGAAGCGCGGTTTCTAGGAGGTTCTCTCTGAAAGTCATCTCATGAATCTGACTCCTCAAATGTAATGGTCACTGCGTCTAAAAGAGTCTCTCTGATGGTCCGATTGAATGCCTAT  
 TTCTTCCGCCGAAAGATCCTCCAGAGAGACCTTTTCAGTAGAGTACTTACACTTGAGGAGTTTACATTTACAGTACGCAGATTTTCTCAGAAAGGACTACCGCCCTAACTTACGATA  
 K K A A F S R R V F S G K S S H E S D S S N V M V T A S K R V L P D G R I E C Y

TCTTCTTCAACAGATCAATTGGAAGCCCTGGACAGTTTCAGAAGATCCAGGTGCTTACTGATGTTGAGACTCTCATTTATGGATGATAAGATTGTTGAAGATGAAGTAAATAAGAA  
AGAAGAAGTTTGCTAGTTAACCTTCGGGGACCGGTGTCAAAGTCTTCTTAGGTCCACGAATGACTACAACCTCAGAGTAATACCTACTATCTTAAACAACCTTCTACTTTCATTATTTCTT  
S S S T D O L E A P G T V S E E S O V L T D V E S L I M D D K I V E D E V N K E  
X<sub>mn</sub>I

TCTGTTCCTCAATGCGGAGACAGTTAGCATCGGAATAATTGGATCTAAACCAAGGTCATTCTCTCCACCCGGCAGAGGGCAAAGAAATATATGACATAGATCCAAAGCTTGACAGGCTTCGT  
 AGACAAGGTTACGCCCTCTGTCAATCGTAGCCTTTTAAACCTAGATTGTGTTCCAGGTAAAGAGGTGGGCGCTCTCCCGTTTCTTATATATCTAGTATCTAGGTTCGAACTGTCGAAAGCA  
 S V P M R E T V S I G K I G S K P R S I P P P G R G O R I Y D I D P S L T G F R

CAACACCTAGATTACCGGTATTCACAGTACAAAAGACTCCGAGAGAAATTGACAAGTATGAAGGTAGTCTGGATGTCATTTTCTCGTGGGTATGAAAAAGTTTGGTTTCTCACCAGTGAA  
 GTTGTGGATCTAATGGCCATAAGTGTTCATGTTTCTGAGGCTCTTCTTTAACTGTTTCATACTTCCATCAGACCTACGTAAGAGCACCACCTATTTCAAACCAAAGAGTCGCTCACTT  
 O H L D Y R Y S O Y K R L R E E I D K Y E G S L D A F S R G Y E K F G F S R S E

## FIG. 2

Bgl II  
ACAGGAATAACTTATAGAGAGTGGGCACCAGGAGCTACGTGGCTGCATTGATTGGAGATTTCATAAATACTGGAATCCATAATCCAGATGTATGATGCTGAGTGTGGTGTCTGGGAG 840  
TGTCCTTATTGAATATCTCTCACCCGTGGTCTCGATGCACCCGACGTAACCTCTAAAGTTATTGACCTTAGGATTACGCTACAGTACTAGTCTTACTACACCCACAGACCCCTC  
T G I T Y R E W A P G A T W A A L I G D F N N W N P N A D V M T O N E C G V W E

Nco I Xho I  
ATCTTTTGGCCGAATAATGCAGATGGTTCACCACCAATTCGCCATGGTCTCGAGTAAAGATACGCATGGATACTCCATCTGGCAACAAGATTCTATTCCTGCTTGGATCAAGTTCTCA 960  
TAGAAAAACGGCTTATTACGCTCTACCAAGTGGTGGTTAAGGGGTACCAAGAGCTCAATTCATGCGTACCTATGAGGTAGACCGTGTGTTCTAAGATAAGGACGAACCTAGTTCAAGAGT  
I F L P N N A D G S P P I P H G S R V K I R M D T P S G N K D S I P A W I K F S

Hind III  
GTTCAACCACGAGGTGAACCTCCCATATAATGGCATATACTATGATCTCTCCGAGGAGGAGAACTATGTGTTCAAAAAATCCTCAGCCAAAGACCAAAATCACTTCGGAATTTATGAGTGC 1080  
CAAGTTCGGTGGTCCACTTGAGGTATATATACCGTATATGATGACTAGGAGGGCTCCTCCTCTTCATACACAAAGTTTTTAGGAGTCCGTTCTCTGTTTAGTGAAGCCATAAATACTCAGC  
V O A P G E L P Y N G I Y Y D P P E E E K Y V F K N P O P K R P K S L R I Y E S

Nde I  
CACGTTGGAATGAGTAGTACGGAGCCAGTAATTAACACATATGCCAACTTTAGAGATGATGCTCTCGCATCAAAAAGCTTGGTACAAATGCTGTTCAGTCAATGGCTATTCAAGAG 1200  
GTGCAACCTTACTCATCATGCTCCGCTGCTCATTAATTGTGTATACGGTTGAAATCTCTACTACAGGAAGGAGCGTAGTTTTTCGAAACCGATGTTACGACAAGTCGAGTACCGATAAGTTCTC  
H V G M S S T E P V I N T Y A N F R D D V L P R I K K L G Y N A V O L M A I O E

Nsi I  
CATTCATATTATGCTAGTTTTGGGTATCAGGTCACAAACCTTTTATGTCAGCTAGCAGCCGATTTGGAACTCCTGATGATTTAAAGTCCCTAGTAGATAAAGCTCAGAGTTAGGTCTTCTT 1320  
GTAAGTATAATACGATCAAAACCCATAGTGCAGTGTGTTGAAAATACGTCGATCGTCGGCTAAACCTTGAGGACTACTAAATTTACGGGATCATCTATTTTCAGTGTCTCAATCCAGAAGAA  
H S Y Y A S F G Y H V T N F Y A A S S R F G T P D D L K S L V D K A H E L G L L

Nsi I  
GTTTCATGCGATATTGTTTCATAGGCATGCATCAACTAATACGTTGGATGGGCTGAATATGTTTATGTTGATGGTACGGATGGTGCATCTTCACTCTGGACCACGGGGTCATCTGGATGTGG 1440  
CAAGAGTACCTATAACAAGTATCGGTACGTAGTTGATTATGCAACCTACCCGACTTATACAAACTACCATGCCCTACCAGTGAAGAGTGAACCTGGTGGCCAGTAGTAACCTACACC  
V L M D I V H S H A S T N T L D G L N M F D G T D G H Y F H S G P R G H H W M W

Nsi I  
GACTCTCGCCTTTTCAACTATGGGAGCTGGGAGGTTCTAAGGTTCTTCTTTTCAAAATACAAGGTGGTGGTGGATGAGTACAAGTTTGATGGGTTGAGTTGAGTGGGGTGACTTCAATG 1560  
CTGAGAGCGGAAAGTTGATACCTCGACCCCTCCAAGATTCCAAGAAGAAAGTTTATGTTCCACCACCAACCTACTCATGTTCAAACTACCCAAGTCTAAACTACCCCACTGAAGTTAC  
D S R L F N Y G S W E V L R F L L S N T R W W L D E Y K F D G F R F D G V T S M

FIG. 2-2

ATGTACCCCATCATGGATTGCAGGTAGATTTCACCGGGAACCTACAATGAATACCTTTGGATATGCAACTGATGTAGATGCTGTGGTTTATCTGTATGCTGTGAATGATATGATTCATGGT 1680  
 TACATGTGGGTAGTACCTAACGTCCTCATCTAAAGTGGCCGTTGATGTTACTTATGAACCTATACGTTGACTACATCTACGACACCAAAATAGACTACGACAACTTACTATATAAGTACCA  
 M Y T H H G L O V D F T G N Y N E Y F G Y A T D V D A V V Y L M L L N D M I H G  
 CTCTTCCCAGAGGCTGTACCAATTGGTGAAGATGTTAGTGAATGCAACAGTTTGCATTCCGGTTGAAGATGGTGGTGTGGCTTTGATTATCTGCTCCACATGGCTGTTGCTGATATAAA 1800  
 GAGAAGGCTCTCCGACAGTGTAAACCACTTCTACAATCACCTTACGGTTGTCAAACGTAAGGCCAACTTCTACCAACACACACCGAACTAATAGCAGAGGTGTACCGACAAACGACTATTT  
 I F L P N N A D G S P P I P H G S R V K I R M D T P S G N K D S I P A W I K F S  
 Nde I  
 TGGGTGAGATTATTTCAGAAAGAGAGATGAAGATTGGGAAATGGGTGACATTGTACATATGCTGACCAACAGGGCGGTGGTTGGAAAAGTGTGTTTCTTATGCTGAAAGTCATGACCAAGGCC 1920  
 ACCCAACTCTAATAAGTCTTCTCTACTTCTAACCCTTTTACCCACTGTAAACATGTATACGACTGGTTGTCGCCACCAACCTTTTTCACACAAAAGAAATACGACTTTCAGTACTGCTCCGG  
 W V E I I O K R O E D W K M G D I V H M L T N R R W L E K C V S Y A E S H D O A  
 CTTGTTGGTGACAAAACCTATTGCTATTGCTGATGGCAAGGATATGTATGACTTTCATGGCTCGTGACAGACCATCTACTCTCTTATAGATCGTGAATAGCAATTGCACAAAATGATC 2040  
 GAACAACCACTGTTTGTATAACGTAACGTAACCGACTACCTGTTCCTATACATACTGAAGTACCGAGCACTGTCTGTGTAGATGAGGAGAATATCTAGCACCTTATCGTAACGTTGTTTACTAG  
 L V G D K T I A F W L M D K D M Y D F M A R D R P S T P L I D R G I A L H K M L  
 Nco I  
 AGGCTTATTACCATGGGCTTAGCGGAGAGAAGGATATTGAAATTTATGGGAAATGAATTTGGACATCCTGTAGTGGATTGATTTTCCAAAGAGGGGATCGACATCTGCCCAATGGTAAAGTA 2160  
 TCCGAATAATGGTACCCGAATCCGCCCTCTTCTCTATAAACTTAAATACCCCTTACTTAAACCTGTAGGACTCACCTAACTAAAGGTTCTCCCTTAGCTGTAGACGGGTTTACCATTTCAT  
 R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H L P N G K V  
 EcoRV  
 ATTCCAGGGAACAACACAGTTATGATAAATGCCGTCGTAGATTGATCTAGGTGATGCAGACTATCTAAGATATCATGGAATGCAAGACTTTGATCAGGCAATGCAACATCTTTGAAGAA 2280  
 TAAGGTCCTTGTGTGTCAATACATAATTTACGGCAGCATCTAAACTAGATCCACTACGTCCTGATAGATTCTATAGTACCTTACGTTCTCAAACTAGTCCGTTACGTTGTAGAACTTCTT  
 I P G N N H S Y D K C R R R F D L G D A D Y L R Y H G M O E F D O A M O H L E E  
 GCCTATGGTTTCATGACTTCTGAGCACCACTATATATACGGAAGGATGAAGAGATCGGATCATTGTCTTTGAGAGGGGAAACCTTCTTTTGTATTCAACTTTTCATTGGACTAACAGC 2400  
 CGGATACCAAAAGTACTGAAGACTCGTGGTCATATATAGTGCCCTTCTCTACTTCCCTTAGCCTAGTAACAGAACTCTCCCCCTTTGGAAACAAAACATAAGTTGAAAGTAACTGATTTGTCG  
 A Y G F M T S E H O Y I S R K D E G D R I I V F E R G N L V F V F N F H W T N S  
 TATTTCAGATTACCGAGTTGGCTGCTTCAAGTCAGGAAAGTACAAGATTGTTTGGACTCGGATGATGGCTTGTTTGGAGGCTTCAACAGGCTTAGTCATGATCGCAGCACTTCACCTTT 2520  
 ATAAGTCTAATGGCTCAACCGACGAAGTTCAGTCCCTTTCATGTTCTAACAAAACCTGAGCCTACTACCGAACAACCTCCGAAAGTTGTCCGAATCAGTACTACGGCTCGTGAAGTGGA  
 Y S D Y R V G C F K S G K Y K I V L D S D D G L F G G F N R L S H D A E H F T F

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FIG. 2-4

84	TTAGTTGGTCAGTTCTCACACTCTCTTAACCTTCTCAGCGAATGGGACACTACACCATATACAGGAATACGTTTTTCCCTTGTCCTCACCTCGCAAAATCTCAATCTACCGGCTTCCATGG	10	20	30	40	50	60	70	80	90	100	110	120
5	TTAGTTGGTCAGTTCTCACACTCTCTTAACCTTCTCAGCGAATGGGACACTACACCATATACAGGAATACGTTTTTCCCTTGTCCTCACCTATGCAAAATCTCAATCTACCGGCTTCCATGG												
1	TTAGTTGGTCAGTTCTCACACTCTCTTAACCTTCTCAGCGAATGGGACACTACACCATATACAGGAATACGTTTTTCCCTTGTCCTCACCTCTGCAAAATCTCAATCTACCGGCTTCCATGG												
264	GGTCTTCTCTGGAAGTCATCTCATGAATCTGACTCCTCAAAATGTAATGGTCACTGCGCTTAAAGAGTCTCTTCCCTGATGGTCGGAATTGAATGCTATTCTTCTTCAACAGATCAATTTGGA	190	200	210	220	230	240	250	260	270	280	290	300
185	GGTCTTCTCTGGAAGTCATCTCATGAATCTGACTCCTCAAAATGTAATGGTCACTGCGCTTAAAGAGTCTCTTCCCTGATGGTCGGAATTGAATGCTATTCTTCTTCAACAGATCAATTTGGA												
181	GGTCTTCTCTGGAAGTCATCTCATGAATCTGACTCCTCAAAATGTAATGGTCACTGCGCTTAAAGAGTCTCTTCCCTGATGGTCGGAATTGAATGCTATTCTTCTTCAACAGATCAATTTGGA												
444	GGATGATAAGATTGTTGAAGATGAAGTAAATAAAGAAATCTGTTCCAAATCGCGGAGACAGATTAGCATCTCGAAAAAATTGGATCTAAACCAGGTCCTTCTCCACCCGGCAGAGGGCAAAG	370	380	390	400	410	420	430	440	450	460	470	480
365	GGATGATAAGATTGTTGAAGATGAAGTAAATAAAGAAATCTGTTCCAAATCGCGGAGACAGATTAGCATCTAGAAAAAATTGGATCTAAACCAGGTCCTTCTCCACCCGGCAGAGGGCAAAG												
361	GGATGATAAGATTGTTGAAGATGAAGTAAATAAAGAAATCTGTTCCAAATCGCGGAGACAGATTAGCATCTAGAAAAAATTGGATCTAAACCAGGTCCTTCTCCACCCGGCAGAGGGCAAAG												
624	ACAGTACAAAAGACTCCGAGAGAAGAAATTGACAAGTATGAAGGTAGTCTGGATGCAATTTTCTCGTGGCTATGAAAAAGTTTGGTTTCTCACGCAGTGAACACAGGAATAACTTATAGAGAGTG	550	560	570	580	590	600	610	620	630	640	650	660
545	ACAGTACAAAAGACTCCGAGAGAAGAAATTGACAAGTATGAAGGTAGTCTGGATGCAATTTTCTCGTGGCTATGAAAAAGTTTGGTTTCTCACGCAGTGAACACAGGAATAACTTATAGAGAGTG												
541	ACAGTACAAAAGACTCCGAGAGAAGAAATTGACAAGTATGAAGGTAGTCTGGATGCAATTTTCTCGTGGCTATGAAAAAGTTTGGTTTCTCACGCAGTGAACACAGGAATAACTTATAGAGAGTG												
804	AGATGTCATGACTCAGAATGAGTGTGGTCTCTGGGAGATCTTTTGGCCGAATAATGCAGATGGTTCAACCAATAATCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG	730	740	750	760	770	780	790	800	810	820	830	840
725	AGATGTCATGACTCAGAATGAGTGTGGTCTCTGGGAGATCTTTTGGCCGAATAATGCAGATGGTTCAACCAATAATCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG												
721	AGATGTCATGACTCAGAATGAGTGTGGTCTCTGGGAGATCTTTTGGCCGAATAATGCAGATGGTTCAACCAATAATCCCAATGGTTCTCGAGTAAAGATACGCATGGATCTCCATCTGG												
984	ATATAATGGCATATACATGATCTCCCGAGGAGGAGAGATGTTGTTCAAAAATCCTCAGCCAAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGTTTGAATGAGTAGTACCGGA	910	920	930	940	950	960	970	980	990	1000	1010	1020
905	ATATAATGGCATATACATGATCTCCCGAGGAGGAGAGATGTTGTTCAAAAATCCTCAGCCAAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGTTTGAATGAGTAGTACCGGA												
901	ATATAATGGCATATACATGATCTCCCGAGGAGGAGAGATGTTGTTCAAAAATCCTCAGCCAAAAGAGACCAAAATCACTTCGGATTATGAGTCGCACGTTTGAATGAGTAGTACCGGA												

FIG. 3-1

FIG. 3-1	FIG. 3-2
FIG. 3-3	FIG. 3-4

FIG. 3

130	140	150	160	170	180	
TGATCGAAGGACCTCCTCTTGGCTTTCTTCAACTTCAAGAAGGGCGGCTTTTCTAGGAG	csbe2con. seq					
CGATCGGAGGACCTCCTCTTGGCTTTCTTCAACTTCAAGAAGGGCGGCTTTTCTAGGAG	20con. seq					
TGATCGAAGGACCTCCTCTTGGCTTTCTTCAACTTCAAGAAGGGCGGCTTTTCTAGGAG	35con. seq					
310	320	330	340	350	360	
AGCCCCCTGGCACAGTTTCAGAAGAATCCAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	csbe2con. seq					
AGCCCCCTGGCACAGTTTCAGAAGAATCCAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	20con. seq					
AGCCCCCTGGCACAGTTTCAGAAGAATCCAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	35con. seq					
490	500	510	520	530	540	
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	csbe2con. seq					
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	20con. seq					
AATATATGACATAGATCCAAAGCTTGACAGGCTTTCGTCAACACCTTAGATTACCGGTATTC	35con. seq					
670	680	690	700	710	720	
GGCACCCAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCATAAATCCCTAATGC	csbe2con. seq					
GGCACCCAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCATAAATCCCTAATGC	20con. seq					
GGCACCCAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCATAAATCCCTAATGC	35con. seq					
850	860	870	880	890	900	
CAACAAAGATTCTATTCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAATCCC	csbe2con. seq					
CAACAAAGATTCTATTCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAATCCC	1805					
CAACAAAGATTCTATTCTGCTGGATCAAGTTCTCAGTTCAAGCACCAGGTGAATCCC	35con. seq					
1030	1040	1050	1060	1070	1080	
GCCAGTAATTAACACATATGCCAACTTTAGAGATGATGCTTCTCCGCATCAAAAAGCT	csbe2con. seq					
GCCAGTAATTAACACATATGCCAACTTTAGAGATGATGCTTCTCCGCATCAAAAAGCT	20con. seq					
GCCAGTAATTAACACATATGCCAACTTTAGAGATGATGCTTCTCCGCATCAAAAAGCT	35con. seq					

FIG. 3-2

1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190
1164	TGGCTACAATGCTGTT	CAGTTCATGGCTATT	CAAGAGCATTCATATT	ATGCTAGTATT	TGGGTATC	ACCTCACA	AACTTTTAT	GCAGCTAG	CAGCCGATTT	TGGAACCTCCTG
1085	TGGCTACAATGCTGTT	CAGTTCATGGCTATT	CAAGAGCATTCATATT	ATGCTAGTATT	TGGGTATC	ACCTCACA	AACTTTTAT	GCAGCTAG	CAGCCGATTT	TGGAACCTCCTG
1081	TGGCTACAATGCTGTT	CAGTTCATGGCTATT	CAAGAGCATTCATATT	ATGCTAGTATT	TGGGTATC	ACCTCACA	AACTTTTAT	GCAGCTAG	CAGCCGATTT	TGGAACCTCCTG
1164	TGGCTACAATGCTGTT	CAGTTCATGGCTATT	CAAGAGCATTCATATT	ATGCTAGTATT	TGGGTATC	ACCTCACA	AACTTTTAT	GCAGCTAG	CAGCCGATTT	TGGAACCTCCTG
1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370
1344	CCATGCATCAACTAAT	ACGTTGGATGGCTGA	ATATGTTTGATGGT	ACGATCGGATCGG	TCACTACTTT	CACTCTGG	ACCACGGGGTC	ATCATTTG	GATCGGGACT	CTCTCGCCCTTT
1265	CCATGCATCAACTAAT	ACGTTGGATGGCTGA	ATATGTTTGATGGT	ACGATCGGATCGG	TCACTACTTT	CACTCTGG	ACCACGGGGTC	ATCATTTG	GATCGGGACT	CTCTCGCCCTTT
1261	CCATGCATCAACTAAT	ACGTTGGATGGCTGA	ATATGTTTGATGGT	ACGATCGGATCGG	TCACTACTTT	CACTCTGG	ACCACGGGGTC	ATCATTTG	GATCGGGACT	CTCTCGCCCTTT
1261	CCATGCATCAACTAAT	ACGTTGGATGGCTGA	ATATGTTTGATGGT	ACGATCGGATCGG	TCACTACTTT	CACTCTGG	ACCACGGGGTC	ATCATTTG	GATCGGGACT	CTCTCGCCCTTT
1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550
1524	GTTTGATGGGTTCA	GAATTTGATGGGT	CACTTCAATGATG	TACACCCATCAT	TGGATTGC	AGGTAGATT	ACCGGCA	ACTTACA	ATGAATAC	TACTTTGGATATGCAACTGATG
1445	GTTTGATGGGTTCA	GAATTTGATGGGT	CACTTCAATGATG	TACACCCATCAT	TGGATTGC	AGGTAGATT	ACCGGCA	ACTTACA	ATGAATAC	TACTTTGGATATGCAACTGATG
1441	GTTTGATGGGTTCA	GAATTTGATGGGT	CACTTCAATGATG	TACACCCATCAT	TGGATTGC	AGGTAGATT	ACCGGCA	ACTTACA	ATGAATAC	TACTTTGGATATGCAACTGATG
1441	GTTTGATGGGTTCA	GAATTTGATGGGT	CACTTCAATGATG	TACACCCATCAT	TGGATTGC	AGGTAGATT	ACCGGCA	ACTTACA	ATGAATAC	TACTTTGGATATGCAACTGATG
1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730
1704	TGGTGAAGATGTTAG	TGGAATGCCAAC	AGTTTGCATTCCG	TTGAAGATGGT	GTGGCTTTG	ATTGATTAT	CGTCTCCA	CATGGCTGT	TCGTGATA	AAATGGGTTGAGATT
1625	TGGTGAAGATGTTAG	TGGAATGCCAAC	AGTTTGCATTCCG	TTGAAGATGGT	GTGGCTTTG	ATTGATTAT	CGTCTCCA	CATGGCTGT	TCGTGATA	AAATGGGTTGAGATT
1621	TGGTGAAGATGTTAG	TGGAATGCCAAC	AGTTTGCATTCCG	TTGAAGATGGT	GTGGCTTTG	ATTGATTAT	CGTCTCCA	CATGGCTGT	TCGTGATA	AAATGGGTTGAGATT
1621	TGGTGAAGATGTTAG	TGGAATGCCAAC	AGTTTGCATTCCG	TTGAAGATGGT	GTGGCTTTG	ATTGATTAT	CGTCTCCA	CATGGCTGT	TCGTGATA	AAATGGGTTGAGATT
1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910
1884	AAAGTGTGTTTCTT	TATGCTGAAAGTC	ATGACACAGGCC	CTTGTGGTGACA	AAACTATT	TGCATTTT	GGCTGATGG	GACAAGGATAT	GTATGACTT	TCATGGCTCGTGACAGAC
1805	AAAGTGTGTTTCTT	TATGCTGAAAGTC	ATGACACAGGCC	CTTGTGGTGACA	AAACTATT	TGCATTTT	GGCTGATGG	GACAAGGATAT	GTATGACTT	TCATGGCTCGTGACAGAC
1801	AAAGTGTGTTTCTT	TATGCTGAAAGTC	ATGACACAGGCC	CTTGTGGTGACA	AAACTATT	TGCATTTT	GGCTGATGG	GACAAGGATAT	GTATGACTT	TCATGGCTCGTGACAGAC
1801	AAAGTGTGTTTCTT	TATGCTGAAAGTC	ATGACACAGGCC	CTTGTGGTGACA	AAACTATT	TGCATTTT	GGCTGATGG	GACAAGGATAT	GTATGACTT	TCATGGCTCGTGACAGAC
1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090
2064	CGGAGAAGGATATTT	GAAATTTTATGG	GAATGAATTTG	GACAACCT	TCAGTGGAT	TGATTTC	CAAGAGG	GGGATCC	CATCTCC	CAATGGTAAACCTATTTCCAGGGAACA
1985	CGGAGAAGGATATTT	GAAATTTTATGG	GAATGAATTTG	GACAACCT	TCAGTGGAT	TGATTTC	CAAGAGG	GGGATCC	CATCTCC	CAATGGTAAACCTATTTCCAGGGAACA
1981	CGGAGAAGGATATTT	GAAATTTTATGG	GAATGAATTTG	GACAACCT	TCAGTGGAT	TGATTTC	CAAGAGG	GGGATCC	CATCTCC	CAATGGTAAACCTATTTCCAGGGAACA
1981	CGGAGAAGGATATTT	GAAATTTTATGG	GAATGAATTTG	GACAACCT	TCAGTGGAT	TGATTTC	CAAGAGG	GGGATCC	CATCTCC	CAATGGTAAACCTATTTCCAGGGAACA
2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270
2244	GCAAGAGTTTGAT	CAAGCAATCC	ATCATCTT	GAAGAAGC	CTATGG	TTTTCATG	ACTTC	TGAGCA	CTTCTGAGCA	CTTCTGAGCA
2165	GCAAGAGTTTGAT	CAAGCAATCC	ATCATCTT	GAAGAAGC	CTATGG	TTTTCATG	ACTTC	TGAGCA	CTTCTGAGCA	CTTCTGAGCA
2161	GCAAGAGTTTGAT	CAAGCAATCC	ATCATCTT	GAAGAAGC	CTATGG	TTTTCATG	ACTTC	TGAGCA	CTTCTGAGCA	CTTCTGAGCA

FIG. 3-3



1200	1210	1220	1230	1240	1250	1260	
ATGATTTAAAGTCCCTAGATAGATAAAGCTCACGAGTTAGGCTCTTCTTGTCTCTCATGGATATTGTTTCATAG	csbe2con. seq						
ATGATTTAAAGTCTCTAATAGATAAAGCTCACGAGTTAGGCTCTTCTTGTCTCTCATGGATATTGTTTCATAG	20con. seq						
ATGATTTAAAGTCTCTAATAGATAAAGCTCACGAGTTAGGCTCTTCTTGTCTCTCATGGATATTGTTTCATAG	35con. seq						
1380	1390	1400	1410	1420	1430	1440	
TCAACTATGGGAGCTGGGAGGTTCTAAGGTTTCTTCTTCAAAATACAAGGTGGTGGTTGGATGAGTACAA	csbe2con. seq						
TCAACTATGGGAGCTGGGAGGTTCTAAGGTTTCTTCTTCAAAATACAAGGTGGTGGTTGGATGAGTACAA	20con. seq						
TCAACCATGGGAGCTGGGAGGTTCTAAGGTTTCTTCTTCAAAATACAAGGTGGTGGTTGGATGAGTACAA	35con. seq						
1560	1570	1580	1590	1600	1610	1620	
TAGATGCTGTGGTTTATCTGATGCTGTGTTGAATGATATGATTCATGGTCTCTTCCCAGAGGCTGTCACCAT	csbe2con. seq						
TAGATGCTGTGGTTTATCTGATGCTGTGTTGAATGATATGATTCATGGTCTCTTCCCAGAGGCTGTCACCAT	20con. seq						
TAGATGCTGTGGTTTATCTGATGCTGTGTTGAATGATATGATTCATGGTCTCTTCCCAGAGGCTGTCACCAT	35con. seq						
1740	1750	1760	1770	1780	1790	1800	
TTCAGAAGAGAGATGAAGATTGGAAAATGGGTGACATTTGTACATATGCTGACCAACAGGCGGTGGTTGGA	csbe2con. seq						
TTCAGAAGAGAGATGAAGATTGGAAAATGGGTGACATTTGTACATATGCTGACCAACAGGCGGTGGTTGGA	20con. seq						
TTCAGAAGAGAGATGAAGATTGGAAAATGGGTGACATTTGTACATATGCTGACCAACAGGCGGTGGTTGGA	35con. seq						
1920	1930	1940	1950	1960	1970	1980	
CATCTACTCTCTTATAGATCGTGGATTTAGCATTTGCACAAAATGATCAGGCTTATACCATGGCTTAGG	csbe2con. seq						
CATCTACTCTCTTATAGATCGTGGATTTAGCATTTGCACAAAATGATCAGGCTTATACCATGGCTTAGG	1805						
CATCTACCCCTCTTATAGATCGTGGATTTAGCATTTGCACAAAATGATCAGGCTTATACCATGGCTTAGG	35con. seq						
2100	2110	2120	2130	2140	2150	2160	
ATCACAGTTATGATAAAATGCCGTCGTTAGTTTGTATCTAGGTTGATGACACATCTAGATATATCATGGAAT	csbe2con. seq						
ATTCACAGTTATGATAAAATGCCGTCGTTAGTTTGTATCTAGGTTGATGACACATCTAGATATATCATGGAAT	20con. seq						
ATTCACAGTTATGATAAAATGCCGTCGTTAGTTTGTATCTAGGTTGATGACACATCTAGATATATCATGGAAT	35con. seq						

csbe2con. seq  
20con. seq  
35con. seq

FIG. 3-4

CTCTCTAATCTCTCAGCGAAATGGGACACTACACCATATCAGGAATACGTTTTCCTTGCTCCACTCTGCAAAATCTCAATCTACGGCTTCCATGGCTATCGGAGGACCTCCTCTTGCC  
 GAGAGATTGAGA??GCTTTACCTGTGATGTGGTATAGTCCCTTATGCAAAAGGAACACGAGGTGAGACGT??AGAGTTAGATGGCCGAAGTACCGATAGCCTCCTGGAGGAGAACGG 120  
 M G H Y T I S G I R F P C A P L C K S O S T G F H G Y R R T S S C  
 TTTCCCTCAACTTCAAGGAGCGGTTTCTAGGAGGCTTCTCTGGAAGTCATCTCATGAATCTGACTCCTCAAATGTAATGGTCACTGCTTCTAAAAGAGTCTTCTGATGGTCGGA  
 AAGGAAGTTGAAGTTCTCCGCAAAAGATCCTCCAGAGAAGACCTTTCAGTAGAGTACTTACATTTACCAGTGACGAAGATTTTCTCAGGAAGGACTACCAGCCT 240  
 L S F N F K E A F S R R V F S G K S S H E S D S S N V M V T A S K R V L P D G R  
 TTGAATGCTATTCTTCAACAGATCAATTGAAGCCCTGGCACAGTTTCAGAAGAAATCCAGGTGCTTACTGATGTTGAGAGTCTCATTTATGGATGATAAGATTGTTGAAGATGAAG  
 AACTTACGATAAGAAGAAGTTGCTTAGTTAACCTTCGGGGACCGTGTCAAAGTCTTCTTAGGTCACGAATGACTACAACTCTCAGAGTAATACCTACTATTCTAACAACTTCTACTTC 360  
 I E C Y S S S T D O L E A P G T V S E E S O V L T D V E S L I M D D K I V E D E  
 Xmn I  
 TAAATAAAGAAATCTGTTCCTCAATGCGGGAGACAGTTAGCATCAGAAAATAATGGATCTAAACCAAGGTCCATTCCTCCACCCGGCAGAGGCAAGAAATATATGACATAGATCCCAAGCTTGA  
 ATTTATTTCTTAGACAAGGTTACGCCCCCTCTGTCAATCGTAGTCTTTTAACTAGATTTGGTTCAGGTAAAGGAGTGGGCCGTCTCCCGTTTCTTATATACTGTATCTAGGTTCCGAAC 480  
 V N K E S V P M R E T V S I R K I G S K P R S I P P G R G O R I Y D I O P S L  
 Hinc II  
 CAGGCTTTCGTCAACACCTAGATTACCGGTATTTCACAGTACAAAAGACTCCGAGAGAAGAAATTGACAAGTATGAAGGTAGTCTGGATGCAATTTCTCGTGGCTATGAAAAGTTTGGTTCT  
 GTCCGAAAGCAGTTGTGGATCTAATGGCCATAAGTGTCATGTCTTCTGAGGCTCTCCTTAACTGTTTCACTACTTCCATCAGACCTACGTAAAGAGACCGGATACCTTTTCAAAACCAAGA 600  
 T G F R O H L D Y R Y S O Y K R L R E E I O K Y E G S L O A F S R G Y E K F G F  
 CACGCAGTGAACAGGAATACTTATAGAGAGTGGGCACCGAGGCTACGTGGGCTGCATTTGAGATTTCATAAAGTGAATCCCTAATGCAGATGTCATGACTCAGAAATGACTGTG  
 GTGCGTCACCTTTGTCCTTATTGAATATCTCTCACCCGTGGTCCCTCGATGCACCGACGTAACCTCTAAAGTTATTGACCTTAGGATTACGTTCTACAGTACTGAGTCTTACTCACAC 720  
 S R S E T G I T Y R E W A P G A T W A A L I G D F N N W N P N A D V M T O N E C

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FIG. 4-1
FIG. 4-2
FIG. 4-3
FIG. 4-4

FIG. 4

FIG. 4-1

Bgl II

Nco I Xho I

GTGTCGCGGAGATCTTTTGGCGAATAATGCAGATGGTTCCACCACCAATTCCTCCATGGTTCTCGAGTAAAGATACGCATGGATACTCCATCTGGCAACAAGATCTATTCCTGCTTGGG 840  
CACAGACCTCTAGAAAAACGGCTTATTACGTCTACCAAGTGGTGTAAAGGGTACCAAGAGCTCATTTCTATGCGTACTATGAGGTAGACCGTTGTTTCTAAGATAAGGACGAACTT  
G V W E I F L P N N A D G S P P I P H G S R V K I R M D T P S G N K D S I P A W

TCAAGTTCTCAGTTCAAGCACGAGTGAACCTCCCATATAATGGCATATACATATGATCTCTCCGAGGAGGAGAGTATGTTTCAAAAAATCCTCAGCCAAAAGAGACCAAAATCACITTCGGA 960  
AGTTCAAGAGTCAAGTTCTGTTGCTCCACTTGAGGGGTATATTACCGGTATATTACCGGTATATGATACATAGGAGGGCTCCTCCTCTTCATACACAAGTTTATTAGGAGTCGGTTTCTCTGTTTATTAGTGAAGCCT  
I K F S V O A P G E L P Y N G I Y Y D P P E E E K Y V F K N P O P K R P K S L R

Hind III

TTTATGAGTCGCACGTTGGAAATGAGTAGTACGGAGCCAGTAATTAACACATATGCCAACTTTAGAGATGATGCTTCTCTCCCATCAAAAAGCTTGGCTACAATGCTGTTCAGCTCATGG 1080  
AAATACTCAGCGTGCAACCTTACTCATCATGCTCGGTCATTAATTGTGTATACGGTTGAAATCTCTACTACACGAGGAGCGTAGTTTTCGAACCGATGTACGACAAGTCGAGTACC  
I Y E S H V G M S S T E P V I N T Y A N F R D D V L P R I K K L G Y N A V O L M

CTATTCAAGAGCATTCATATATATGCTAGTTTGGGTATCAGTCACAAACCTTTTATGACAGCTAGCAGCCGATTTGGAACTCTCTGATGATTTAAAGTCTCTAATAGATAAAGCTCAGCAGT 1200  
GATAAGTTCTCGTAAGTATAATACGATCAAAACCCATAGTCAGTGTTTGAAATACTCGATCGCTCGGCTAAACCTTGAGGACTACTAAATTTACAGAGATTATCTATTTTCGAGTGCTCA  
A I O E H S Y Y A S F G Y H V T N F Y A A S S R F G T P D D L K S L I D K A H E

Nsi I

TAGGTCTTCTTGTTCATGGATATTGTTTCATAGCCATGCATCAACTAATACGTTGGATGGGCTGAATATGTTGATGGTACGGATGGTCACTACTTTCACCTCTGGACCACGGGTCATC 1320  
ATCCAGAAGAACAAAGTACCTATAACAAGTATCGGTACGTAGTTGATTATGCAACCTACCCGACTTATACAAACTACCATGCCTACCAGTGAAGTGAAGTGAACCTGGTGCCCCAGTAG  
L G L L V L M D I V H S H A S T N T L D G L N M F D G T D G H Y F H S G P R G H

ATTGGATGTGGACTCTCGCCTTTTCAACTATGGGAGCTGGGAGGTTCTAAGGTTTCTTTTCAAAATGCAAGTGGTGGTGGATGAGTACAAGTTTGATGGGTTTCAGATTGATGGGG 1440  
TAACCTACACCTGAGAGCGGAAAGTTGATACCCCTCGACCCCTCCAAGATTCCAAGAAGAAGTTTACGTTCCACCACCAACCTACTCATGTTCAAACTACCCCAAGTCTAAACTACCCCC  
H W M W O S R L F N Y G S W E V L R F L L S N A R W L D E Y K F D G F R F D G

TGACTTCAATGATACCCATCATGGATTGCAAGTAGATTTTACCGGCAACTACAATGAATACCTTTGGATATGCAACTGATGTAGATGCTGTGGTTTATTGTGCTGTGAATGATA 1560  
ACTGAAGTTACTACATGTGGGTAGTACCTAACGTCCATCTAAAATGGCGTTGATGTACTTATGAACCTATACGTTGACTACATCTACGACACCAAAATAAACTACGACAACCTTACTAT  
V T S M M Y T H H G L O V D F T G N Y N E Y F G Y A T D V D A V V Y L M L L N D

TGATTTCATGGTCTTCCCAGAGGCTGTACCATTTGGTGAAGATGTTAGTGAATGCCAACAGTTTGCATTCGGTTGAAGATGGTGGTGTGGCTTTGATTATCGTCTCCACATGGGTG 1680  
ACTAAGTACCAGAGAAGGTCTCCGACAGTGGTAACCACTTCTACAATACCTTACGTTGTCAAAACGTAAGGCCAACTTCTACCACCACAACCCGAACTAATAGCAGAGGTGTACCGAC  
M I H G L F P E A V T I G E D V S G M P T V C I P V E D G G V G F D Y R L H M A

FIG. 4-2

TTGCTGATAAATGGGTTGAGATTATTCAAGAAGAGAGATGAAGATTGGAAATAATGGGTGACATTGTACATATCTGACCAACAGCGCGTGGTTGGAATAAGTGTCTTTCTTATCTGCTGAAAGTC 1800  
 AACGACTATTACCCAACTCTAATAAGTCTCTCTCTACTTCTTAACCTTTTACCCTGTAAACATGTATACGACTGGTTGTCCGCCACCAACCTTTTTCACACAAAGAATACGACTTTTCAG  
 V A D K W V E I I O K R D E D W K M G D I V H M L T N R R W L E K C V S Y A E S  
 ATGACCAGGCCCTTGTGGTGACAAAACATATTGCATTTTGGCTGATGGACAAGGATATGTATGACTTCATGGCTCTTGACAGACCATCTACTCCTCTCATAGATCGTGGAGTAGCATTTGC 1920  
 TACTGGTCCGGGAACAACCACTGTGTTTGAATAACGTAAACCCGACTACCTGTTCCTATACATACCTGAAGTACCGAGAACTGTCTGGTAGATGAGGAGAGTATCTAGCACCTCATCTCGTAACG  
 H D O A L V G D K T I A F W L M D K D M Y D F M A L D R P S T P L I D R G V A L  
 BclI                      NcoI  
 ACAAATGATCAGGCTTATTACCATGGGATTAGCGGAGAGGATATTGAATTTTATGGGAAATGAATTTTGGACACCCCGAGTGGATTGATTTTCCAAAGAGGTGATCTACATCTTCCCCA 2040  
 TGTTTTACTAGTCCGAATAATGGTACCCCTAATCCGCCCTCTTCCCTATAAACTTAAATACCCCTTACTTAAACCTGTGGGGCTCACCTAACTAAAGGTTCTCCACTAGATGTAGAAGGGT  
 H K M I R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D L H L P  
 EcoRV                      BclI  
 GTGGTAAATTGTTCTCTGGGAACAATTACAGTTATGATAAATGCCGGCGTAGGTTTGATCTAGGCAATTCAAAGCATCTGAGATATCATGGAATGCAAGAGTTTGCATCAAGCAATTACAG 2160  
 CACCATTAAACAAGGACCCCTTGTTAATGTCAATACTATTTACGGCGCGCATCCAAACTAGATCCCGTTAAGTTTCGTAGACTCTATAGTACCTTACGTTCTCCTCAAACTAGTTCGTTAAGTCG  
 S G K F V P G N N Y S Y D K C R R F D L G N S K H L R Y H G M O E F D O A I O  
 ATCTTGAAGAAGCCCTATGGTTTCATGACTTCTGAGCACCAATACATATACCGAAGGATGAAAGGGATCCGATCATTTGTCTTCGAGAGGGGAAACCTCGTTTTTGTATTCAATTTTCATT 2280  
 TAGAACTTCTCGGATACCAAGTACTGAAGACTCGTGGTTATGTATAGTGCCTTCTACTTTCCCTAGCCTAGTAACAGAAGCTCTCCCTTTGGAGCAAAAACATAGTTAAAAGTAA  
 H L E E A Y G F M T S E H O Y I S R K D E R D R I I V F E R G N L V F V F N F H  
 GGACTAGCAGCTATTCCGATTACCGAGTTGGCTGCTTAAAGCCAGGAAGTACAAGATAGTCTTGGATTACAGATGATCCCTTTGTTGGAGGCTTTGGCAGGCTTAGTCATGATGCAGAGC 2400  
 CCTGATCGTATAGCCCTAATGGCTCAACCGACGAAATTTCCGGTCCCTTCATGTTCTATCAGAACTTAAGTCTACTAGGAAACAAACCTCCGAAACCGTCCGAAATCAGTACTACGTCCTCG  
 W T S S Y S D Y R V G C L K P G K Y K I V L D S D D P L F G G F G R L S H D A E  
 ACTTCAGCTTTGAAGGTGGTACGATAACCGGCCCTCGATCCCTTCATGGTGTACACACCATGTAGAACAGCAGTGGTCTATGCTTTAGTGGAGGATGAAGTGGAGATGAATTTGGAACCTG 2520  
 TGAAGTCGAAACTTCCCACTATGCGCGGAGCTAGGAAGTACCACATGTGTGGTACATCTTGTGTCACCAGATACGAAATCACCTCTCTACTTTCACCTCTTACTTAACCTTGGAC  
 H F S F E G W Y D N R P R S F M V Y T P C R T A V V Y A L V E D E V E N E L E P  
 TCGCGGTTAAGATATATCTTAAACAACAGGTTCTGAAGCAGGAATGCCATTATTGATCTTCTCTATGTT 2588  
 AGCGGCAATTCTATATAGAATTGTGTCCAAGACTTCGTCTCTTACGGTAATAACTAGAAGGATACAA  
 V A G

FIG. 4-3

125+94. seq	r60 TAGTTTTGGGTACCATGTACAAAACCTTTTTCACCTAGCAGCCGATTGGAACCTCCTGATGATTGAAG r70 TAGTTTTGGGTA CA GTCACAAACCTTTT TCACCTAGCAGCCGATTGGAACCTCCTGATGATT AAG r80 TAGTTTTGGGTATCAGTCAACAACTTTTATGTCAGCTAGCAGCCGATTGGAACCTCCTGATGATTAAAG r90 r100 r110 r120
116. seq	r1140 r1150 r1160 r1170 r1180 r1190 r1200
125+94. seq	r130 r140 r150 r160 r170 r180 r190
116. seq	r200 r210 r220 r230 r240 r250 r260
125+94. seq	r270 r280 r290 r300 r310 r320 r330
116. seq	r340 r350 r360 r370 r380 r390 r400
125+94. seq	r410 r420 r430 r440 r450 r460 r470
116. seq	r480 r490 r500 r510 r520 r530 r540
125+94. seq	r550 r560 r570 r580 r590 r600 r610
116. seq	r620 r630 r640 r650 r660 r670 r680
125+94. seq	r690 r700 r710 r720 r730 r740 r750
116. seq	r760 r770 r780 r790 r800 r810 r820

FIG. 5-1

FIG. 5-2

FIG. 5-3

FIG. 5

FIG. 5-1

125+94. seq	r690	r700	r710	r720	r730	r740	r750
116. seq	1770	1780	1790	1800	1810	1820	1830
125+94. seq	r760	r770	r780	r790	r800	r810	r820
116. seq	1840	1850	1860	1870	1880	1890	1900
125+94. seq	r830	r840	r850	r860	r870	r880	r890
116. seq	1910	1920	1930	1940	1950	1960	1970
125+94. seq	r900	r910	r920	r930	r940	r950	r960
116. seq	1980	1990	2000	2010	2020	2030	2040
125+94. seq	r970	r980	r990	1000	1010	1020	1030
116. seq	2050	2060	2070	2080	2090	2100	2110
125+94. seq	r1040	r1050	r1060	r1070	r1080	r1090	r1100
116. seq	2120	2130	2140	2150	2160	2170	2180
125+94. seq	r1110	r1120	r1130	r1140	r1150	r1160	r1170
116. seq	2190	2200	2210	2220	2230	2240	2250
125+94. seq	r1180	r1190	r1200	r1210	r1220	r1230	r1240
116. seq	2260	2270	2280	2290	2300	2310	2320
125+94. seq	r1250	r1260	r1270	r1280	r1290	r1300	r1310
116. seq	2330	2340	2350	2360	2370	2380	2390

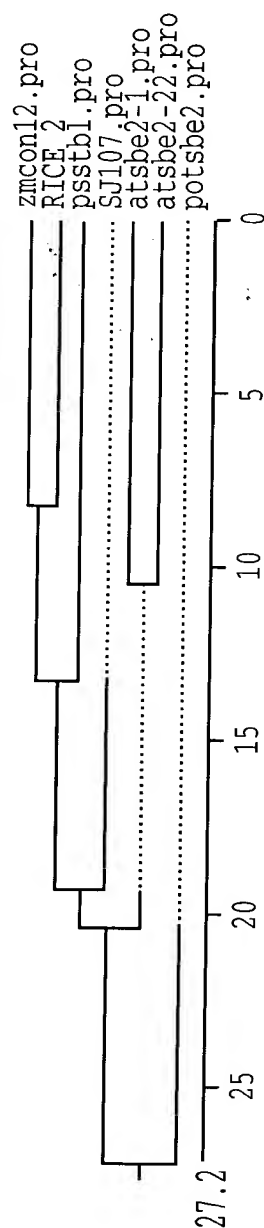
125+94. seq      r1320      r1330      r1340      r1350      r1360      r1370      r1380  
 TGGAGGCTTCAACAGGCTTAGTCATGATGCGAGCACTTACCTTTGACGGTGGTATGATAACCGGCT  
 TGGAGGCTT      CAGGCTTAGTCATGATGC GAGCACTTCA CTTTGA GGGTGGTA GATAACCGGCT  
 116. seq      TGGAGGCTTTGGCAGGCTTAGTCATGATGCGAGCACTTACCTTTGAAGGTGGTACGATAACCGGCT  
                  '2400      '2410      '2420      '2430      '2440      '2450      '2460  
 125+94. seq      r1390      r1400      r1410      r1420      r1430      r1440      r1450  
 CGGTCCTTCATGGTATATGCACCATCTAGCACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
 CGGTCCTTCATGGTATATGCACCATCTAGCACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
 116. seq      CGGTCCTTCATGGTATATGCACCATCTAGCACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG  
                  '2470      '2480      '2490      '2500      '2510      '2520      '2530

FIG. 5-3

FIG. 6

125-94. pro	r10	r20	r30	r40	r50	r60	r70
116. pro	r370	r380	r390	r400	r410	r420	r430
125-94. pro	r80	r90	r100	r110	r120	r130	r140
116. pro	r440	r450	r460	r470	r480	r490	r500
125-94. pro	r150	r160	r170	r180	r190	r200	r210
116. pro	r510	r520	r530	r540	r550	r560	r570
125-94. pro	r220	r230	r240	r250	r260	r270	r280
116. pro	r580	r590	r600	r610	r620	r630	r640
125-94. pro	r290	r300	r310	r320	r330	r340	r350
116. pro	r650	r660	r670	r680	r690	r700	r710
125-94. pro	r360	r370	r380	r390	r400	r410	r420
116. pro	r720	r730	r740	r750	r760	r770	r780
125-94. pro	r430	r440	r450	r460	r470		
116. pro	r790	r800	r810	r820	r830		

FIG. 7





MA - Y T I S G V R F P - V P S - - K G A V S - - G F N G D R R N S S - V S F F L K K H S - S L S R K V F A G K V S

Month	Number of People
January	50
February	40
March	35
April	30
May	35
June	40
July	20
August	25
September	30
October	35
November	40
December	45

[illegible]

Month	Number of People
January	95
February	100
March	105
April	110
May	115
June	120
July	125
August	128
September	130
October	132
November	135
December	125

[illegible]

Month	Number of Cases
March 2020	70
May 2020	210
July 2020	180
September 2020	190
November 2020	200
January 2021	190
March 2021	180

[illegible]

FIG. 8-1	FIG. 8-2
FIG. 8-3	FIG. 8-4
FIG. 8-5	FIG. 8-6
FIG. 8-7	FIG. 8-8

FIG. 8

FIG. 8-1

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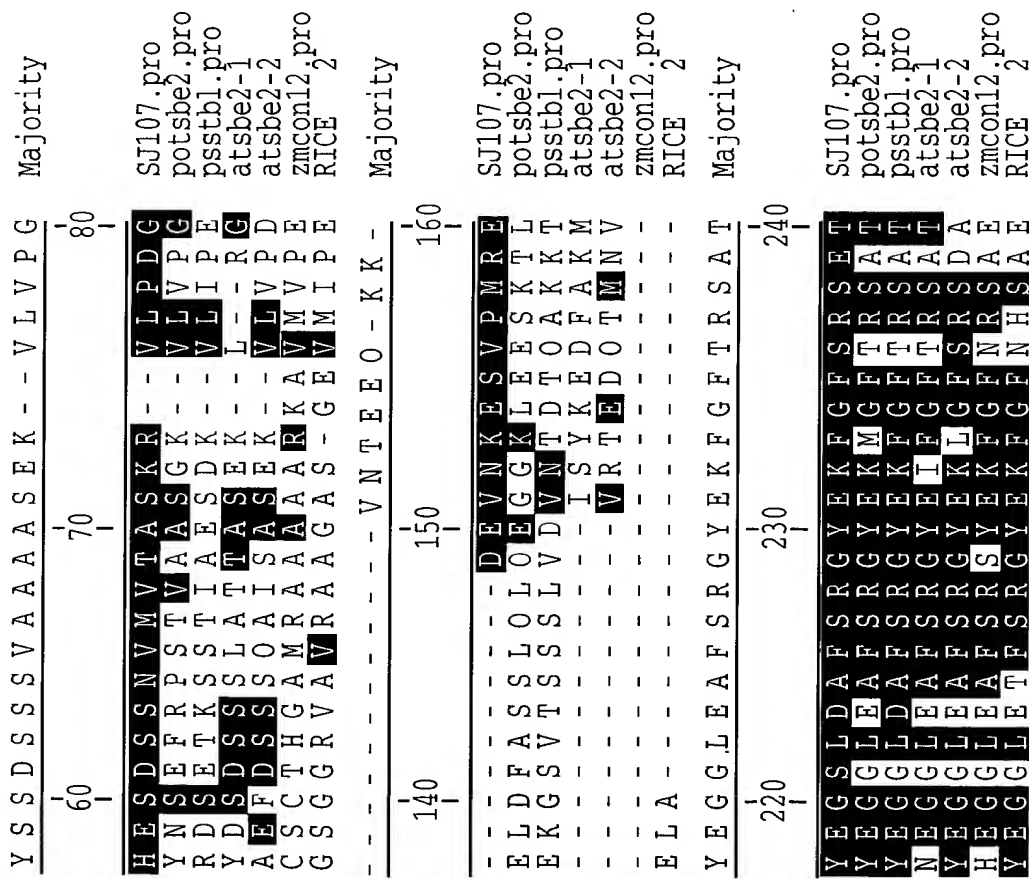


FIG. 8-2



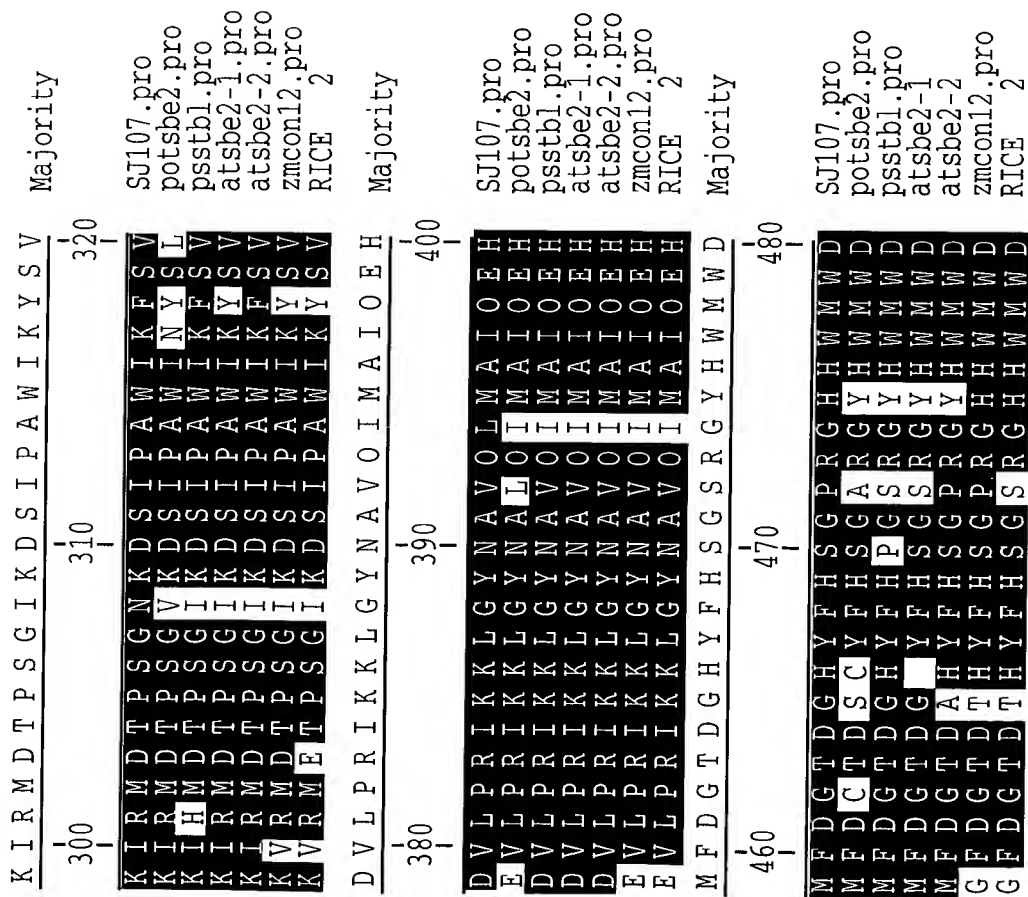


FIG. 8-4

SRRLFNYGSEVLRYYLLSNARWLEEEYKFDDGFRFFDGVTSMMYTHHGLQVGFTCGNYNNEYFCG

439  
473  
461  
449  
413  
414  
440

[illegible]

519  
553  
541  
529  
493  
494  
520

[illegible]

599  
633  
621  
609  
573  
574  
600

[illegible]

FIG. 8-5

L A T D V D A V V Y L M L V N D L I H G L	Majority	
540	550	560
A A T D V D A V V Y L M L V N D L I H G L	SJ107.pro	
L A T D V D A V V Y L M L V N D L I H G L	potsbe2.pro	
L A T D V D A V V Y L M L V N D L I H G L	psstbl.pro	
L A T D V D A V V Y L M L V N D L I H G L	atsbe2-1.pro	
L A T D V D A V V Y L M L V N D L I H G L	atsbe2-2.pro	
L A T D V D A V V Y L M L V N D L I H G L	zmcon12.pro	
L A T D V D A V V Y L M L V N D L I H G L	RICE 2	
L T N R R W L E K C V S T A E S H D O A L	Majority	
620	630	640
L T N R R W L E K C V S Y A E S H D O A L	SJ107.pro	
L T N R R W L E K C V S Y A E S H D O A L	potsbe2.pro	
L T N R R W L E K C V S Y A E S H D O A L	psstbl.pro	
L T N R R W L E K C V S Y A E S H D O A L	atsbe2-1.pro	
L T N R R W L E K C V S Y A E S H D O A L	atsbe2-2.pro	
L T N R R W L E K C V S Y A E S H D O A L	zmcon12.pro	
L T N R R W L E K C V S Y A E S H D O A L	RICE 2	
G H P E W I D F P R G E O H L P D G K V I	Majority	
700	710	720
G H P E W I D F P R G E O H L P D G K V I	SJ107.pro	
G H P E W I D F P R G E O H L P D G K V I	potsbe2.pro	
G H P E W I D F P R G E O H L P D G K V I	psstbl.pro	
G H P E W I D F P R G E O H L P D G K V I	atsbe2-1.pro	
G H P E W I D F P R G E O H L P D G K V I	atsbe2-2.pro	
G H P E W I D F P R G E O H L P D G K V I	zmcon12.pro	
G H P E W I D F P R G E O H L P D G K V I	RICE 2	

FIG. 8-6



R V I V F E R G N L V F V F N F H W T N S Y											
Majority											
SJ107.pro											
potsbe2.pro											
psstbl.pro											
atsbe2-1.pro											
atsbe2-2.pro											
zmcon12.pro											
RICE 2											
Majority											
SJ107.pro											
potsbe2.pro											
psstbl.pro											
atsbe2-1.pro											
atsbe2-2.pro											
zmcon12.pro											
RICE 2											
Majority											
SJ107.pro											
potsbe2.pro											
psstbl.pro											
atsbe2-1.pro											
atsbe2-2.pro											
zmcon12.pro											
RICE 2											
Majority											
SJ107.pro											
potsbe2.pro											
psstbl.pro											
atsbe2-1.pro											
atsbe2-2.pro											
zmcon12.pro											
RICE 2											
Majority											
SJ107.pro											
potsbe2.pro											
psstbl.pro											
atsbe2-1.pro											
atsbe2-2.pro											
zmcon12.pro											
RICE 2											
Majority											

FIG. 8-8



FIG. 9

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ATGGAAGAAGATATGATGACTTCATGGCTCTTTGACAGACCATCTACTCCTCTCATAGATCGTGGAGTAGCATTCACAAAAATGATCAGGCTTATTACCA  
 TACCTGTTCCCTATACATACTGAAGTACCGAGAACTGTGTGGTAGATGAGGAGAGTATCTAGCACCTCATCGTAACGTGTTTACTAGTCCGAATAATGGT 100  
 M D K D M Y D F M A L D R P S T P L I D R G V A L H K M I R L I T  
 TGGGATTAGCGGAGAGGATATTGAATTTTATGGGAAATGAATTTGGACACCCGAGTGGATTGATTTTCAAGAGGTGATCTACATCTTCCAGTGG 200  
 ACCCTAATCCGCCCTCTCCCTATAAACTTAAATAACCTTTACTTAAACCTGTGGGCTCACCTAACTAAAGGTCTCCACTAGATGTAGAAGGTCACC  
 M G L G G E G Y L N F M G N E F G H P E W I D F P R G D L H L P S G  
 Bcl I  
 EcoR V  
 TAAATTTGTTCCCTGGGAACAATTACAGTTATGATAAAATGCCGGCGTAGGTTTGATCTAGGCAATTCAAAGCGTCTGAGATATCATGGAATGCAAGAGTTT 300  
 ATTTAAACAAGGACCCCTGTTAATGTCAATACATAATTTACGGCCGCATCCAAACTAGATCCGTTAAGTTTCGCAGACTCTATAGTACCTTACGTTCTCAAA  
 K F V P G N N Y S Y D K C R R F D L G N S K R L R Y H G M O E F  
 GATCAAGCAATTTCAGCATCTTGAAGAAGCCTATGTTTCATGACTTCTGAGCACCATAATACATATCACGGAAGGATGAAAGGATCGGATCATTTGTCTTCG 400  
 CTAGTTCTGTTAAGTCGTAGAACTTCTTCGGATACCAAGTACTGAAGACTCGTGGTTATGTATAGTGCCTTCTACTTTCCCTAGCCTAGTAACAGAAAGC  
 D O A I O H L E E A Y G F M T S E H O Y I S R K D E R D R I I V F  
 AGAGGGAAACCTCGTTTGTATTCAATTTTCATTTGGACTAGCAGCTATTCGGATTACCGAGTTGGCTGCTTAAAGCCAGGAAAGTACAAGATAGTCTT 500  
 TCTCCCTTTGGAGCAAAAACATAAGTTAAAGTAACCTGATCGTCGATAAGCCTAATGGCTCAACCGACGAATTCGGTCTCTTTCATGTTCTATCAGAA  
 E R G N L V F V F N F H W T S S Y S D Y R V G C L K P G K Y K I V L  
 GGATTCAGATGATCCTTTGTTGGAGGCTTTGGCAGGCTTAGTCATGATGACAGACACTTCAGCTTTGAAGGTTGGTACGATAACCGGCCCTCGATCCTTC 600  
 CCTAAGTCTACTAGGAACAACACCTCCGAACCGTCCGAATCAGTACTACGTCGTGAAGTCGAAACTTCCACCATGCTATTGGCCGAGCTAGGAAG  
 D S D D P L F G G F G R L S H D A E H F S F E G W Y D N R P R S F  
 ATGGTGTACACACCATGTAGAACAGCAGTGGTCTATGCTTTAGTGGAGGATGAAGTGGAGAAATGAAGTGAACCTGTCCCGGTTAAGATATATCTTAGC 700  
 TACCACATGTGTGGTACATCTTGTGCTACCAAGATACGAAATCACCTCCTACTTCACCTTCTACCTTGGACAGCGGCCAATTCATATATAGAATCG  
 M V Y T P C R T A V V Y A L V E D E V E N E V E P V A G  
 AACAGGTTCTGAAGCAGGAATGCCATTATTCATCTTCCATGTGCTATCGGTTGAACGAAATATATTGAGCCTATAATTTGATGTACGGTCTTCAG 800  
 TTGTCCAAAGACTTCGCTTACGGTAATAACTAGAGGATACACGTAGACGCAACTTGCCTTTATATAACTCGGATATTAACACTACAGTCCAGGAACGTC  
 ATTTCCATCCTGGTCTTGGTATTTTGTGTCATGATAACATAATAAGACCAATAGGAACCGCAGGTTACATGCTAGCTTCCATCATCATAGGGAG 900  
 TAAAGGTAGACCAAGAACCATAAACACACAGTACTATTTGTATTAGTTTCTGGTTATCCCTTTCGGTCCCAATGTACGATCGAAGTAGTAGTATCCCTC  
 Bcl I  
 CTCAGACCTCTAAACCATAAATCTTCAAGCTGCCTCGGTTGAGTATGTTATGTGTTACTTTGCAATCTTAAATATCATGATCGCTGTGGATGCTA 1000  
 GAGTCTGGAGGATTTGGTATTTAGAACTTCGACGGACGCAAGCCATCATACAATACACCATGAACGTTAGAAATTTAATAGTACTAGCGACACCTTACGAT  
 ACTATGACAAATTTTGTATATATGCCCAACGAGGATTTTAAGTTTTTAAAAAACAACAAAAATCCATG  
 TGATACTGTAAACACATATATACGGTTGCTCTCTTAAATTTTCAAAATTTTCTTCTGTTTTTTTTTAGGTAC 1069



[illegible]

FIG. 10-2

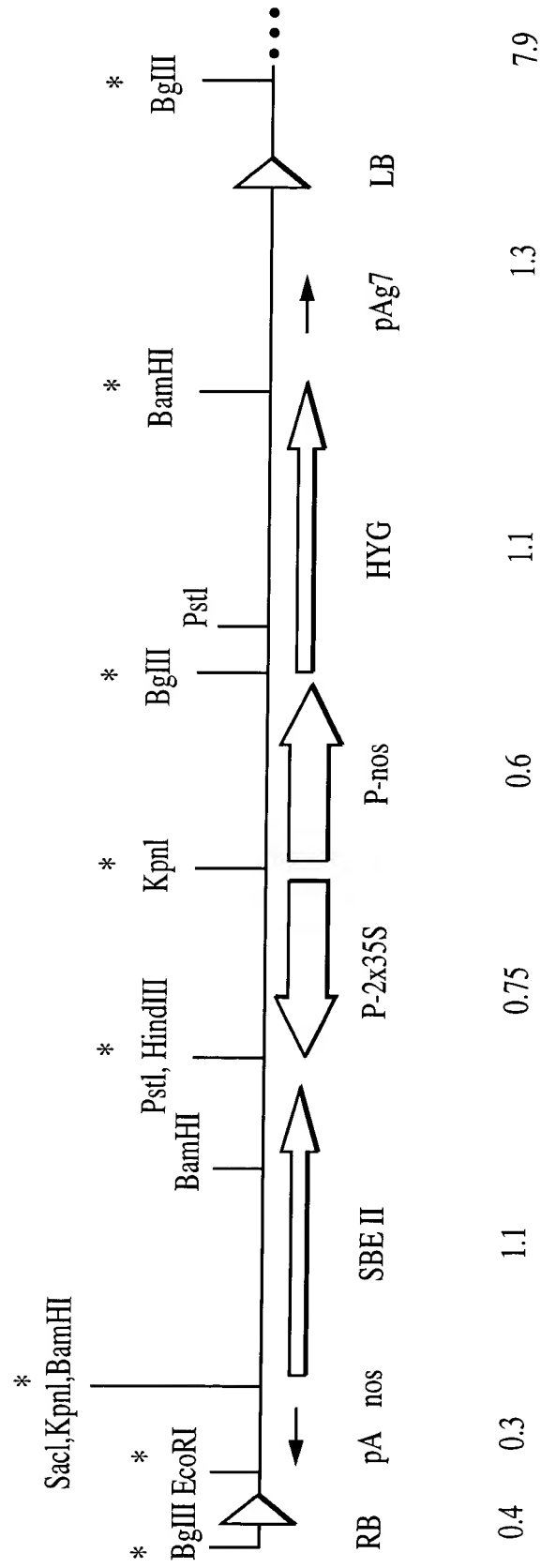


FIG. 11

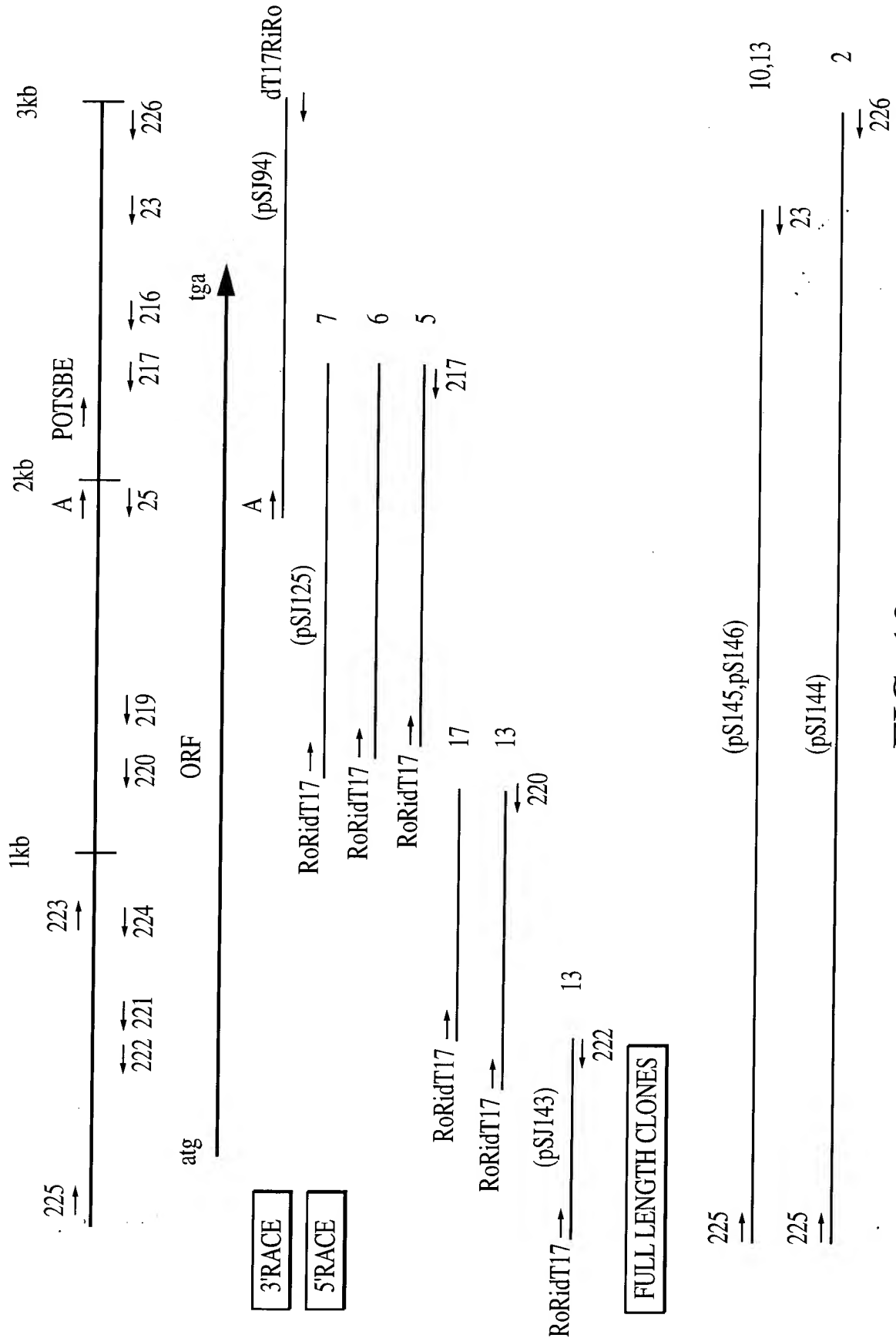


FIG. 12

Kpn I  
 Xma I  
 Sac I      Sma I      BamH I  
 AGTGAATTCGAGCTCGGTACCCGGGGATCCGATTCGCATTTCTCGCTATTGCTTTCGGTTTATTTCCATATATAAAATATCAATCTAATCACTTGGCCCATTTCTATCTCTCTCCAAC 120  
 TCACTTAAGCTCGAGCCATGGGCCCTAGGCTAAGCGTAAGAGCGATACGAAAGGCAATAAAGCTATATATTTTATAGTTTAGATTAGTCAACGCGGTAAAGATAGAGAGAGGTTTG  
 Nco I  
 TCTCACCGAAATGGTATACTACACTGTATACAGGCATACGTTTCTTGTGCACCTTCACCTCTACAATCTCAGCTCACCAAGCTTCCATGGCGGTGCGAAGACCTTCTTGGCCTTTCCCTT  
 AGAGTGGCTTTACCATATGATGTACATAGTCCCGTATGCAAAAGGAACACGTGGAAGTGAGATGTTTACAGTCGAGTGGTCGAAGGTACCGCCAGCTTCCCTGGAGAAAGACCGGAAAGGAA 240  
 M V Y Y T V S G I R F P C A P S L Y K S O L T S F H G G R T S S G L S F  
 Bcl I  
 CCTCTTGAAAGGAGCTGTTCCCTCGGAAGATCTTTGCTGGAAAGTCTCTTATGAATCTGACTCTCCTCAAAATTTAACTGTCTCTGCATCTGAGAAGGTCCCTTGTTCCTGATGATCAGAT 360  
 GGAGAACTTCTTCCTCGACAAAGGAGCCTTCTAGAAACGACCTTTCAGGAGAATACTTAGACTGAGGAGTTTAAATTGACAGAGACGTAGACTCTTCCAGGAACAAGGACTACTAGTCTA 30/33  
 L L K K E L F P R K I F A G K S S Y E S D S S N L T V S A S E K V L V P D D O I  
 BstX I  
 TGATGGCTCTTCTTCAACATATCAATTAGAAACCACTGGCACAGTTTGGAGGAATCCACGGTTCTTGGTGATGCAGAGAGTCTTGTGATGGAAGATGATAAGAAATGTTGAGGAGGA 480  
 ACTACCGAGAAGAAGTTGTATAGTTAATCTTTGGTGACCGTGTCAAAACCTCTTAGGTCGCAAGAACCACTACGTCCTCAGAACACTACCTTCTACTATTCTTTACAACCTCCTCCT  
 D G S S S T Y O L E T T G T V L E E S O V L G D A E S L V M E D D K N V E E D  
 Hind III  
 TGAAGTAAAAAAGAGTCGGTTCCATTGCATGAGACAATTAGCATTTGGAATAAGTGAATCTAAACCAAGGTCCATTCTCCACCTGGCAGTGGGAGAGAAATATATGACATAGATCCAAG 600  
 ACTTCATTTTCTCAGCCAAGTAACGTACTCTGTTAATCGTAACCTTTTTCACCTTAGATTGGTTCAGGTAAAGAGGTGGACCGTCACCCGTCCTCTTATATACTGTATCTAGGTTTC  
 E V K K E S V P L H E T I S I G K S E S K P R S I P P G S G O R I Y D I D P S

FIG. 13-1  
 FIG. 13-2  
 FIG. 13-3  
 FIG. 13-4

FIG. 13  
 FIG. 13-1



TCATCATTTGGTGTGGGACTCTCCGCTTTTCAACTATGGAAGCTGGAGGTGCTAAGATTTCCTCTTCAAAATGCAAGATGGTGGTTGGAAGAGTACAGGTTTGATGGTTTATAGATTGA 1560  
 AGTAGTAACCAACACCCCTGAGAGCGGAAAAGTTGATACCTTCGACCCCTCCACGATTCTTAAGAAGAAAAGTTTACGTTTACCACCAACCTTCTCATGTGTCACAACTACCAAAATCTAAACT  
 H H W L W D S R L F N Y G S W E V L R F L L S N A R W W L E E Y R F D G F R F D  
 Nco I  
 TGGGTGACTTCCATGATGTACACTCCCCATGGGTTGCAGGTAGCTTTTACTGGCAACATACAAATGAGTACTTTTGGATATGCAAACTGATGTAGATGCTGTGATTTATTTGATGCTTTGTGAA 1680  
 ACCCACTGAAGGTACTACATGTGAGGGGTACCCAACGTCCATCGAAAATGACCGTTGATGTACTCATGAACCTATACGTTGACTACATCTACGACACTAAATAAACTACGAACACTT  
 G V T S M M Y T P H G L O V A F T G N Y N E Y F G Y A T D V D A V A Y L M L V N  
 Sca I  
 TGATATGATTCACGGTCTTTTCCCTGAGGCTGTTACCAATGGTGAAGATGTTAGCGGAAAAGCCAAACATTTTGCATTCACAGTGAAGATGGTGGTGTGGATTTGATTTGATGCTTTGTGAA 1800  
 ACTATACTAAGTGCAGAAAAGGACTCCGACAAATGGTAACCACTTCTACAATCGCCTTTCGGTTGTAAACGTAAGGTACCTTCTACCCACCACCACTTAACTAAATGGCAGAGGTGTA  
 D M I H G L F P E A V T I G E D V S G K P T F C I P V E D G G V G F D Y R L H M  
 GGCCATTGCCGATAAATGGATTGAGATTCTTAAGAAGAGACATGAGGACTGGAAAATGGGTGACATTGTGCATACACTACCAACAGAGGTGGTTGGAAAAAATGTGTGCTTATGCTGA 1920  
 TTCAGTACTGTTTCGAGAACCAACCACTGTTTGTATAACGTAAACCGCACTACCTGTTCCTGTACATGCTGAAGTACCGAGCACTGTCTGGTAGATGAGGAGAAATATCTAGCACCTTATCGG  
 A I A D K W I E I L K K R D E D W K M G D I V H T L T N R R W L E K C V A Y A E  
 AACTCATGACCAAGCTCTTGTGTGGTGACAAAACATAATTGCATTTTGGCTGATGGACAAGGACATGTACGACTTCTATGGCTCGTGACAGACCATCTACTCCTCTTATAGATCGTGGAAATAGC 32/33  
 TTCAGTACTGTTTCGAGAACCAACCACTGTTTGTATAACGTAAACCGCACTACCTGTTCCTGTACATGCTGAAGTACCGAGCACTGTCTGGTAGATGAGGAGAAATATCTAGCACCTTATCGG 2040  
 S H D O A L V G D K T I A F W L M D K D M Y D F M A R D R P S T P L I D R G I A  
 Bcl I  
 ATTGCACAAAATGATCAGGCTTATTACCATGGGCTTAGCGGAGAGGATATTTTGAATTTTATGGGAAAATGAATTTGGACATCCTGAGTGAATTCATTTTCAAGAGGGGATCGACATCT 2160  
 TAACGTGTTTACTAGTCCGAATAATGGTACCCGAATCCCGCTCTTCCATATAAACTTAAATAACCCCTTTACTTAAACCTGTAGGACTCACCTTAATAAGGTTCTCCCCCTAGCTGTAGA  
 L H K M I R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H L  
 Bcl I  
 GCCCAATGGTAAAGTAATCCAGGGAACAACCACTGATGATAAATGCCGTGCTAGATTTGATCTAGGTGATGACACACTATCTAAGATATCATGGAATGCAAGAGTTTGATCAGGCAAT 2280  
 CCGGTACCATTTCATTAAGGTCCTTGTGGTGTCAATACTATTACGGCAGCATCTAACTAGATCCCACTACGTCGTGATAGATTCTATAGTACCTTACGTTCTCAAACTAGTCCGTTA  
 P N G K V I P G N N H S Y D K C R R R F D L G D A D Y L R Y H G M O E F D O A M

FIG. 13-3



GCAACATCTTGAAGAAGCCATATGGTTTCATGACTTCTGAGCACCAGTATATATACCGAAGGATCAAGGATCGGATCATTTGTCTTTTGAGAGGGGAAACCTTGTTTTGTATTCAACTT 2400  
 CGTTGTAGAACTTCTTCGGATACCAAGTACTGAAGACTCTGGTGCATATATAGTGCCTTCTAGCTAGTAAACAGAACTCTCCCTTTTGGAAACAAAACATAAGTTGAA  
 O H L E E A Y G F M T S E H O Y I S R K D E G D R I I V F E R G N L V F V F N F  
 TCATTGGACTAACACAGCTATTACAGATTACCGAGTTGGCTGCTTCAAGTCAAGAAAGTACAAGATTGTTTGGACTCGGATGATGGCTTGTGGAGGCTTCAACAGGCTTAGTCATGATGC 2520  
 AGTAACCTGATTGTGCGATAAGTCTAATGGCTCAACCGACGAAGTTCAAGTCCCTTTCATGTTCTAACAACAAACCTGAGCCTACTACCGAACAACCTCCGAAAGTTGTCCGAATCAGTACTACG  
 H W T N S Y S D Y R V G C F K S G K Y K I V L D S D D G L F G G F N R L S H D A  
 CGAGCACTTACCTTTGACGGGTGGTATGATAACCGGCCCTCGGTCCTTCATGGTATATGCACCATCTAGGACAGCAGTGGTCTATGCTTTAGTAGAAGATGAAGAGAATGAAGCAGAGAA 2640  
 GCTCGTGAAGTGGAACCTGCCACCACCTACTATTGGCCGGAGCCAGGAAGTACCATAFACGTGGTAGATCCTGTGTCACCCAGATACGAAATCATCTTCTACTTCTTACTTCTGCTCTT  
 E H F T F D G W Y D N R P R S F M V Y A P S R T A V V Y A L V E D E E N E A E N  
 BamHI Hinc II  
 TGAAGTAGAAAGTGAAGTGAACACGACCTCCGGCTGAGATAGATATTTAGTAAGAGGATCCCCCTAAAGCAGGAATGGTTAACCTGTGCATCTGCAATTGAACGACGTATATTGAGACTGGA 2760  
 ACTTCATCTTTTCACTTTCACCTTGGTTCGGAGGCCGACTCTATCTATATAAATCATCTCTAGGGGATTTTCGTCCTTACCAATTGGACACGTCAGCAGTAACTTGTGCATATAACTCTGACCT  
 E V E S E V K P A S G  
 Sal I  
 Nde I Xba I Hinc III Pst I  
 AATCCATATGACTAGTAGATCTCTAGAGTCGACCTGCAGGCATG 2805  
 TTAGGTATACTGATCATCTAGGAGATCTCAGCTGGACGTCCTGATC

FIG. 13-4